

twenty-three years I have written a good deal about the harm done to England by the general dislike that there is among all classes for any kind of education. I do not say that this dislike is greater than it used to be in England; I complain that it is about as great. But I have never spoken of the decadence of England. It is only that we have been too confident that those manufactures and that commerce and that skill in engineering, for which Napoleon sneered at us, would remain with us for ever. Many writers have long been pointing out the consequences of neglecting education; prophesying those very losses of trade, that very failure of engineers to keep their houses in order, which now alarms all newspaper writers. Panics are ridiculous, but there is nothing ridiculous in showing that we can take a hint. We have had a very strong hint given us that we cannot for ever go on with absolutely no education in the scientific principles which underlie all engineering. There is another important thing to remember. Should foreigners get the notion that we are decaying, we shall no longer have our industries kept up by an influx of clever Uitlanders, and we are much too much in the habit of forgetting what we owe to foreigners, Fleming and German, Hollander, Huguenot and Hebrew, for the development of our natural resources. Think of how much we sometimes owe to one foreigner like the late Sir William Siemens.

But I am going too far; there is after all not so very much of the foolishness of Ishbosheth among us, and I cannot help but feel hopeful as I think lovingly of what British engineers have done in the past. We who meet here have lived through the pioneering time of mechanical and electrical and various other kinds of engineering. Our days and nights have been delightful because we have had the feeling that we also were helping in the creation of a quite new thing never before known. It may be that our successors will have a better time, will see a more rapid development of some other applications of science. Who knows? In every laboratory of the world men are discovering more and more of Nature's secrets. The laboratory experiment of to-day gives rise to the engineering achievement of to-morrow. But I do say that, however great may be the growth of engineering, there can never be a time in the future history of the world, as there has never before been a time, when men will have more satisfaction in the growth of their profession than engineers have had during the reign of Queen Victoria.

And now I want to call your attention to a new phenomenon. Over and over again has attention been called to the fact that the engineer has created what is called "modern civilisation," has given luxuries of all kinds to the poorest people, has provided engines to do all the slave labour of the world, has given leisure and freedom from drudgery, and chances of refinement and high thought and high emotion to thousands instead of units. But it is doing things more striking still. Probably the most important of all things is that the yoke of superstitions of all kinds on the souls of men should be lifted. The study of natural science is alone able to do this, but education through natural science for the great mass of the people, even for the select few called the distinguished men of the country, has been quite impossible till recently. I say that it is to engineers that the world owes the possibility of this new study becoming general. In our country nearly all discoveries come from below. The leaders of science, the inventors, receive from a thousand obscure sources the germs of their great discoveries and inventions. When every unit of the population is familiar with scientific ideas, our leaders will not only be more numerous, but they will be individually greater. And it is we, and not the schoolmasters, who are familiarising the people with a better knowledge of Nature. When men can hardly take a step without seeing steam-engines and electro-motors and telegraphs and telephones and steamships, with drainage and water works, with railways and electric tramways and motor-cars; when every shop-window is filled with the products of engineering enterprise, it is getting rather difficult for people to have any belief in evil spirits and witchcraft.

All the heart-breaking preaching of enthusiasts in education would produce very little effect upon an old society like that of England if it were not for the engineer. He has produced peace. He is turning the brown desert lands of the earth into green pastures. He is producing that intense competition among nations which compels education. If England has always been the last to begin reform, she has always been the most thorough and steadfast of the nations on any reform when

once she has started on it. Education, pedagogy, is a progressive science; and who am I that I should say that the system of education advocated by me is that which will be found best for England? In the school education of the average boy or man England has as yet had practically no experience, for she has given no real thought to it. Yet when she does, I feel that although the Finsbury scheme for engineers may need great improvement, it contains the germ of that system which must be adopted by a race which has always learnt through trial and error, which has been led less by abstract principles or abstract methods of reasoning than any race known in history.

NOTES.

WE learn from the *Times* that the work at the Ben Nevis Observatory is to be continued for another year without change in its character. The Meteorological Council in London has agreed to continue its grant of 250*l.* to the low-level observatory at Fort William and the grant of 100*l.* to the high-level observatory. The proceeds derived from furnishing newspapers with meteorological reports and from other sources will amount, it is hoped, to about 150*l.*, the sum hitherto yielded. The balance of the cost of maintenance, amounting to about 1000*l.*, has been readily subscribed by the public. This satisfactory arrangement will enable the staff to prosecute its work without interruption until the Parliamentary Committee inquiry has reported.

REUTER telegrams state that both craters of the Soufrière have been active since September 11, that communication by wireless telegraphy is to be established between Martinique and Guadaloupe, and that a shock of earthquake was felt in many of the northern towns of South Australia on Friday morning last. A severe shock was also experienced in Adelaide in the evening of the same day.

THE medals and prizes will be distributed to the students of the Royal College of Science, South Kensington, in the theatre of the Victoria and Albert Museum at 2.30 p.m. on Thursday next. The opening address of the new session will be delivered by Prof. John Perry, F.R.S., and Sir Arthur Rücker, F.R.S., will also speak.

THE death is announced in the *Athenaeum* of Theodor v. Heldreich, director of the Botanic Gardens at Athens. The deceased botanist, who was in his eighty-first year, devoted his attention mainly to the flora of Greece, and was the author of numerous works.

AMONG the deaths of foreign men of science we notice the following:—M. Damour—a member of the Paris Academy of Sciences—at the age of 94, and Prof. O. G. Nordenström, of the Stockholm School of Mines. The former was well known for his chemical analyses of rare minerals, and the latter was an authority on mining and the author of numerous technical memoirs.

THE suggestion that a public subscription should be opened for the purpose of purchasing the house in which Pasteur was born and presenting it to the town of Dôle was brought before the French Association at its recent session.

A SCHEME has been proposed to the Italian Minister of Posts and Telegraphs by Mr. Marconi for the creation of a radio-telegraphic station communicating with the stations established or to be established by the Marconi companies in London and in America. The scheme, which is still under consideration, would, if carried out, cost about 70,000 lire. It was announced at a dinner given in Mr. Marconi's honour that the King of Italy had bestowed the Cross of a Grand Officer of the Italian Order of the Crown upon the inventor.

A PRELIMINARY report on the subject of the wireless telegraphy experiments conducted by a board of naval officers

has, according to the *Western Electrician*, been submitted to the U.S. Navy Department. The board reported that it had tried the Rochefort system with some success, messages having been received and sent with accuracy, and that it was now proposed to test in turn a French and two German systems.

ON Friday afternoon last, Mr. Stanley Spencer, the aéronaut, sailed from the Crystal Palace in the airship he has constructed. A successful voyage over London was made, and the vessel descended at Eastcote, near Pinner.

THE *British Medical Journal* states that arrangements are nearly completed for the formation of a new society to be known as the Therapeutical Society, which shall concern itself with the medicinal properties of every kind of natural product of value in practical medicine. As new countries are opened up, plants hitherto unknown are brought to this country, and, as our contemporary remarks, the society may fulfil a most useful function if it undertakes to study the chemical, pharmacological and therapeutical qualities of such plants, especially those which are believed by the natives of the countries from which they come to possess valuable medicinal properties. The first president will be Sir W. T. Thiselton-Dyer, K.C.M.G., F.R.S., and the first hon. secretary Dr. T. E. B. Brown, master of the Society of Apothecaries. The meetings are to be held in the house of the Society of Apothecaries, and the first will take place shortly to make the necessary preliminary arrangements for the first year's work.

PART of an expedition for the survey of the Gold Coast set sail from Liverpool on Saturday last. The remaining members of the expedition, numbering between thirty and forty, and consisting of trained surveyors from the Ordnance Survey and surveyors from Queensland and New Zealand, will leave for West Africa on October 4.

AN inquiry into the earthquakes in Guatemala and Martinique has been undertaken by Prof. Sapper, of Tübingen, who has obtained leave of absence for the purpose from the Württemberg Government.

AN international exhibition of photography is to be held in Moscow in the spring of next year. It will be divided into the following sections:—(1) Scientific photography; (2) artistic photography; (3) photography applied to printing; (4) works on photography; (5) technical applications of photography; (6) photography considered as a special industry.

THE following rewards are offered by the Government of South Australia for the discovery and working within the State of a deposit or deposits of marketable mineral manure—500/- if found on Crown lands; 250/- if found on freehold lands. It is stipulated (1) that the deposit is easily accessible and within a reasonable distance of a railway or seaport, and not within twenty-five miles of any discovery on account of which any bonus has been paid; (2) that the deposit is sufficiently abundant and is available at a price which will allow of it being remuneratively used for agricultural purposes; (3) that the product is of a good marketable quality, averaging not less than 40 per cent. of phosphate of lime. In the event of a phosphate of a lower average composition being discovered, it may be recommended that a portion of the reward be paid. Applications must reach the Minister for Agriculture, Adelaide, not later than December 31.

IT was found from the examination of 55,000 children in some thirty-six public schools in New York that no fewer than 12 per cent. suffered from contagious diseases of the eyes.

To prevent such children from attending the institutions, a routine examination of the eyes is in future to be made at regular intervals, and for this purpose ophthalmic surgeons have been appointed.

JUDGING from the reports issued by the teachers in the various West Indian islands, the experiment of introducing the subject of agriculture into the elementary schools, which was due to a suggestion made by the Commissioner of the Imperial Department of Agriculture, has already begun to yield satisfactory results. The best accounts come from Jamaica, where the training college at Kingston provides a suitable centre for imparting instruction to teachers in training and special classes; here, too, good practical work has been accomplished. School gardens are being instituted, notably in Jamaica, Trinidad and Tobago, but in some of the islands they have not proved so successful owing to predial larceny. A full account of the agricultural conference appears in the last number of the *West Indian Bulletin*, when besides these reports several papers of an economic nature were read. The Hon. Sydney Olivier pointed out the necessity for careful sorting and good packing of exported fruit if West Indian growers hoped to establish a market in England and America. He suggested that an inspector should be appointed to report on the condition of the fruit as it arrived at its destination. The Hon. W. Fawcett read a paper on the banana industry in Jamaica, which gave general information on the habits of the plant and its method of cultivation. Statistics show that at present the exports to England are small in proportion to those shipped to America. Mr. A. Howard brought forward evidence to show that epiphytes do harm to cacao trees mainly by blocking up the lenticels. He advised spraying with copper sulphate or rosin compound to kill off the smaller plants. Other papers were, "Insect Pests," by Mr. H. Maxwell-Lefroy; "Barbados Aloes," by Mr. W. G. Freeman; and "Essential Oils," by Mr. J. H. Hart.

THE issue of the *Elektrochemische Zeitschrift* for August contains a useful reference article by Dr. H. Lienau on bauxite. This mineral is the chief source of the commercial aluminium produced by the electrolytic processes, and although many attempts have been made, and are still being made, to replace it by some cheaper raw material, these attempts hitherto have been unsuccessful. Natural deposits of bauxite occur in France, Germany, Ireland and the United States, those of the department Var in southern France being at present the most extensively worked. In 1896 this district produced 29,620 tons and in 1901 65,000 tons, of which total 55,000 tons were exported to other countries. After a reference to the geological formation in which bauxite occurs and to the varying composition of the deposits, the author describes the various processes which have been worked at one time or another for extracting aluminium or its compounds from this source. The first patented process dates from 1858, and had for its object the extraction of aluminium hydrate from red bauxite. The demand by paper and colour manufacturers for a cheaper source of aluminium sulphate than the alums turned attention to the direct production of aluminium sulphate from bauxite, but the efforts to produce this salt, free from iron, from red bauxite have not been completely successful. The utilisation of bauxite for the electrometallurgical production of aluminium is a comparatively recent development, but very large quantities of the mineral are now being used in aluminium reduction works. The author surmises from this fact that bauxite is being employed directly in the electrolytic baths, and that the troublesome and costly process by which alumina was first extracted from the raw bauxite is now being dispensed with.

MR. F. KROHN sends from Funchal, Madeira, some notes on sunset glows observed by him during June, July and August, in continuation of those previously described by him (p. 199). On a number of occasions, even when the sky above and to the west was overcast at sunset, a pink glow could be seen on the eastern horizon just before sunset, and then just immediately after or at the time of sunset a pink glow would suffuse the cloud screen above. Mr. Krohn was under the impression that the phenomenon was rather more marked about July 6-7, 12-16 and 26-27, but these dates, especially the last two, are uncertain. Since the end of July, clear weather has prevailed, and during August 1-3 a well-marked maximum was observable, the phenomenon being particularly well marked on August 2, when both sunrise and sunset displays were very fine, the sky at the time being quite clear. The latter sunsets, however, were very far from equalling the displays of June 10-11. The rays or spokes in the pink haze, mentioned in Prof. A. S. Herschel's letter of July 10 (NATURE of July 24), have been observed by Mr. Krohn four or five times. From the observations it is concluded that the volcanic dust and moisture cloud is travelling at an average rate of about thirty miles an hour in the latitude of Funchal. This does not seem an improbable rate if Prof. Herschel's estimate of the height of the present cloud is correct, for the rate at which the Krakatoa cloud travelled was about seventy-two miles an hour; but this cloud was travelling at a much greater height.

WHEN well marked, the phenomena observed by Mr. Krohn at sunset followed the course described by Prof. Herschel. In Mr. Krohn's words, "A pink glow appears in the east in the form of a broad band above a broad greenish-grey band down on the horizon. The pink band gradually extends upwards and disappears as the glow begins to form a pink arc in the western horizon, which until then shows a white hazy area above the sun's point of setting. Gradually the white area contracts and assumes a more golden hue. The pink arc also contracts and assumes a more intense colour; at the outer edge it is more purple where the pink mixes with the blue of the sky. A dirty greenish-grey haze now begins to spread upwards from the eastern horizon and finally replaces the pink halo in the west as a purplish-grey arc around a whitish halo. This faint purplish halo or arc is visible for some time after dusk has set in. At sunrise the phenomena are practically the same, but the order is reversed and the colours near the horizon seem to be purer."

THE director of the Philippine Weather Bureau, the Rev. Fr. José Algué, S.J., has issued the first part of a report containing an account of the climate of Baguio (Benguet), as gathered from a complete year's observations. The report is very thoroughly made and is the first of its kind, and one of its main objects is to draw attention to climatological conditions of certain regions of the archipelago which might be advantageously chosen as health resorts. In the case of each of the meteorological elements here discussed, a comparison of the facts is made with the data already recorded at and published by the Manila Observatory. The meteorological station at Baguio is of quite recent date, having been in operation since August, 1900, and its equipment was made more complete after the establishment of the Philippine Weather Bureau in May, 1901. The present report contains the observations of pressure, temperature, relative humidity, fog, clouds, rainfall, wind, and in most cases curves of the daily and yearly variations are given. The concluding chapter is devoted to a comparison of the climate of this station with those of other tropical stations at similar altitudes.

THE trustees of the British Museum at Bloomsbury have issued a capital "Guide to the Antiquities of the Stone Age in the Department of British and Mediæval Antiquities," which is

accompanied by ten plates and 142 other illustrations. It has been prepared by Mr. Charles H. Read, who observes that his work is to some extent rendered incomplete owing to the fact that many objects essential to a full understanding of the Stone age are at the Natural History Branch in Cromwell Road, while some localities and some classes of implements are not so well represented as they should be in the national collection. Although he groups the antiquities under those of Palæolithic and Neolithic ages, he figures and describes certain Eolithic implements, recognising that the existence of an earlier and ruder type is in itself not improbable. His reference to the occurrence of "early Palæolithic" implements in beds older than the chalky boulder clay, though based on a statement in a Geological Survey memoir, requires qualification, as the evidence is far from satisfactory. The text is, however, so full of information and the illustrations are so excellent, exhibiting the chipped and polished stone-implements from all parts of the world, as well as engraved stones, bones and horns, and pile-dwellings, that the work will be highly appreciated by all who take an interest in the antiquity of man.

MR. T. MELLARD READE has given an account of the Glacial and post-Glacial features of the River Lune and its estuary (*Proc. Liverpool Geol. Soc.*, vol. ix. 1902). The lower part of the valley is a pre-Glacial excavation that was filled with Boulder-clay and other glacial drift, and since to a large extent removed by river denudation, the various stages being recorded by terraces cut in the drift. The later deposits include thick sands and clayey sands rich in foraminifera, of which lists have been furnished by Mr. Joseph Wright.

A FULL account of a recent peat and forest bed at Westbury-on-Severn has been contributed by Mr. Mellard Reade, Mr. A. S. Kennard and others to the *Proceedings* of the Cotteswold Naturalists' Field Club (vol. xiv. part 1). The deposits include blue clays containing foraminifera, an intermediate peat bed with branches and roots of trees, and an overlying mass of tidal alluvium. The foraminifera appear to have lived in the locality and probably in brackish water. The peat bed has yielded many land and fresh-water mollusca, which with other remains indicate climatic conditions similar to those of the present day. The deposits are recent, and the indications they furnish of changes of level prior to the Roman occupation are briefly discussed.

A PAPER by E. Guyou, entitled "La Méthode des Distances Lunaires, le Présent, le Passé, l'Avenir," has reached us. The author considers that the publication of lunar distances of certain stars in the national ephemerides has had a bad effect in that it has concentrated observation upon those stars all of which at the moment of observation are possibly too far from the moon for accurate observation, and that therefore repeated failure to obtain accurate results has led to the abandonment of the method. The author expects now to see the method revive, observers being no longer biased in their choice and taking the most convenient star. We think he is too sanguine.

THE chemical composition of tubercle bacilli derived from various sources, especially in regard to the amount of ash and of phosphoric anhydride, and of the alcoholic, ether and chloroform extracts, has been investigated by De Schweinitz and Dorset. There is a distinct difference in the composition of the various bacilli; the alcoholic extract of avian bacilli is very much greater than that of any other variety, but the chloroform extract of bovine and of human virulent bacilli is almost the same. There is also a greater difference between the virulent and non-virulent human bacilli than between the virulent human, bovine and equine bacilli. (*Amer. Med.*, July 19, p. 93.)

IN the August number of the *American Chemical Journal* is an interesting paper by Messrs. Franklin and Stafford on reactions between acid and basic amides in liquid ammonia. Solutions of these amides in liquid ammonia are conductors of electricity, a fact presumably due to electrolytic dissociation of the dissolved substances. It would appear that these amides indeed bear a relation to liquid ammonia which in many respects is very similar to that borne by ordinary acids and bases to water. Complete or partial neutralisation of the dissolved amides takes place with the formation of one or more molecules of the solvent ammonia in which the reaction takes place. By bringing together liquid ammonia solutions of different acid and basic amides, the authors have prepared a large number of metallo-substituted acid amides; for example, monopotassium acetamide, mono- and di-potassium benzamide, mono- and di-potassium sulphamide, mono- and di-potassium urea, magnesium acetamide, &c.

IN a *Bulletin* of the Bussey Institution, vol. iii. No. 2, Prof. F. H. Storer describes the results of tests for mannose carried out on a large number of vegetable species. From these it would appear that mannan is fairly widely distributed in plant life. The amount of mannan in the trunk-wood of sugar-maple trees felled during the period of hibernation is considerably greater than that in maple trees felled at the beginning or end of May, that is, during or just after the formation of new leaves upon the trees. The author comes to the conclusion that mannan as well as starch is stored as reserve food in the wood of the sugar maple.

THE sixteenth number of the *Revue générale des Sciences*, issued on August 30, contains a short article, by Mr. P. Lemoult, on the new synthesis of indigo patented by Sandmeyer. The author points out that the Sandmeyer synthesis possesses several advantages, from a chemical point of view, over the two processes which are now used on the large scale for the artificial production of indigo. An estimate of the cost of production by the new process indicates that the indigo obtained should compete successfully on the market with the natural product and that of the older synthetic methods.

IN vol. xvii. of the *Journal* of the College of Science, Imperial University, Tokyo, Messrs. Divers and Ogawa show that it is possible to prepare sulphamide from ammonium amido-sulphite with a 10 per cent. yield, whereas the older method of obtaining it from sulphuryl chloride and ammonia only gives 1 to 2 per cent. of the theoretical amount.

TO the September number of the *Zoologist*, Mr. R. C. J. Swinhoe contributes some important notes on prehistoric man in Burma. It will be remembered that in 1894 Dr. F. Noetling announced in the *Records* of the Geological Survey of India the discovery in a bed of ferruginous conglomerate at the oil-fields of Yenangyoung of worked flints in association with the remains of *Hipparrison antilopinus* and *Rhinoceros verimensis*, thus carrying back the existence of man in that country to the older Pliocene or upper Miocene. A year later, Mr. R. D. Oldham expressed the opinion that, in the first place, the flints are not confined to the ferruginous conglomerate and, secondly, that they are not chipped by man. As the result of a recent visit to the locality, Mr. Swinhoe confirms Dr. Noetling's view that the chipped flints, and likewise certain faceted bones, are the works of men's hands; but, on the other hand, he regards them as of Palæolithic age, the place where they were found being apparently a workshop of that period.

THE September issue of the *Quarterly Journal of Microscopical Science* contains four articles of a highly technical nature, for the most part interesting only to specialists. In the first of the four, Dr. T. H. Bryce treats of the maturation of the

egg in the common sea-urchin; he is followed by Mr. R. I. Pocock, who discusses the "entosternite" of spiders and scorpions. The third article, by Dr. S. F. Harmer, is devoted to the morphology of polyps allied to the common sea-mat, while in the fourth, Mr. L. Doncaster describes the development and anatomy of the annelid sagitta.

Nos. 1275 and 1276 of the *Proceedings* of the U.S. Museum are respectively devoted to a list of the beetles of the Columbia district, by Mr. H. Ulke, and to the description of some new South American birds, by Mr. H. C. Oberholser.

THE additions to the Zoological Society's Gardens during the past week include a Vervet Monkey (*Cercopithecus talanitii*) from South Africa, presented by Mrs. O'Connor; a Rhesus Monkey (*Macacus rhesus*) from India, presented by Miss Faulkner; a Lesser White-nosed Monkey (*Cercopithecus peturista*) from West Africa, presented by Mr. C. W. Woodhouse; a Black-headed Lemur (*Lemur brunneus*) from Madagascar, presented by Dr. H. C. Hilliard; a Grey Parrot (*Pithecus erithacus*) from West Africa, presented by Captain Paget J. Bourke; a Carrion Crow (*Corvus corone*) British, presented by Miss N. Simmons; a Great Barbet (*Megaloema virens*) from the Himalayas, presented by Mr. R. Phillips; eighteen Green Tree Frogs (*Hyla arborea*) European, presented by Dr. E. L. Gough; a Common Marmoset (*Hapale jacchus*), an All-green Tanager (*Chlorophonia viridis*), a Blue Sugar-bird (*Dacnis cayana*) from Brazil, a Suricate (*Suricata tetradactyla*) from South Africa, a Prairie Marmot (*Cynomys ludovicianus*) from North America, a Crab-eating Opossum (*Didelphys cancrivorus*) from Tropical America, a Levaillant's Amazon (*Chrysotis levaillanti*) from Mexico, three Asiatic Quails (*Perdicula asiatica*) from India, deposited; an Axis Deer (*Cervus axis*) born in the Gardens.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN OCTOBER:—

Oct. 10. 0h. 41m. to 5h. 34m. Transit of Jupiter's Sat. IV.
 12. 2h. 7m. to 5h. 49m. Transit of Jupiter's Sat. III.
 13. 11h. 24m. Minimum of Algol (β Persei).
 15. Venus. Illuminated portion of disc = 0°981, of Mars = 0°930.
 16. 8h. 13m. Minimum of Algol (β Persei).
 16. 10h. 17m. to 11h. 18m. Moon occults ξ^1 Piscium (mag. 4°2).
 16. 16h. 17m. to 19h. 50m. Total eclipse of the moon partly visible at Greenwich. The moon sets at 18h. 32m. when totally eclipsed.
 19. 5h. 58m. to 9h. 40m. Transit of Jupiter's Sat. III.
 19. 17h. 8m. to 18h. 13m. Moon occults δ^1 Tauri (mag. 4°0).
 19. 17h. 43m. to 18h. 43m. Moon occults δ^2 Tauri (mag. 4°7).
 19-21. Epoch of Orionid meteoric shower. Radiant 91°+15°.
 22. 12h. 53m. to 13h. 44m. Moon occults λ Gemini (mag. 3°6).
 23. 9h. Mercury in conjunction with Venus. Mercury, 1° 20' S.
 26. 9h. 54m. to 13h. 36m. Transit of Jupiter's Sat. III.
 30. 6h. Venus in conjunction with moon. Venus, 0° 54' N.
 30. Partial eclipse of the sun slightly visible at Greenwich. The eclipse ends at 19h. 1m., or 8 minutes after sunrise at Greenwich on the morning of Oct. 31.

REPORT OF THE MELBOURNE OBSERVATORY FOR 1901.—New buildings are being added at a cost of 1500*l.*, and, with the repairs that have already been done, this will add considerably to the efficiency of the Observatory.

The third Melbourne catalogue for the epoch 1890 has been in the printer's hands since last December. 336 plates have been exposed in connection with the astrophotographic chart, and of these, 320 have been passed as satisfactory.